

Emergence of multi-resistant *Salmonella* serotype Typhimurium DT104 R-type ACSSuT in the United States

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Background: The increase of antimicrobial-resistant *Salmonella* is a health problem worldwide. The United Kingdom is experiencing an epidemic of *Salmonella* serotype Typhimurium definitive type 104 (DT104) resistant to ampicillin, chloramphenicol, streptomycin, sulfonamide, and tetracycline (R-type ACSSuT). This strain has not been reported elsewhere. In the United Kingdom, resistance to fluoroquinolones rapidly emerged in *S. Typhimurium* DT104 R-type ACSSuT following the veterinary use of fluoroquinolones. Fluoroquinolones have recently been approved for use in the United States.

Methods: As part of the ongoing CDC/FDA/USDA National Antimicrobial Monitoring System (NARMS), 14 local and state health departments (total population = 74 million) forwarded every 10th *Salmonella* isolate to CDC to be tested for resistance to 15 antimicrobial agents. Randomly selected *S. Typhimurium* isolates were phage typed.

Results: In 1996, 277 (33%) of 854 isolates were resistant to one or more antimicrobial agents, although none were fluoroquinolone resistant; 243 (28%) were multiresistant. The most common multiresistant pattern, seen almost exclusively in *S. Typhimurium* isolates and present throughout the United States, was R-type ACSSuT; 69 (35%) of 198 *S. Typhimurium* isolates were R-type ACSSuT. Compared with other salmonellae, *S. Typhimurium* R-type ACSSuT was more likely to be cultured from blood (relative risk [RR] = 2.37, 95% confidence interval [CI] = 1.25-4.51) and from female patients (RR = 1.71, CI = 1.07-2.73). Twenty-five (85%) of 30 *S. Typhimurium* R-type ACSSuT isolates were DT104.

Conclusions: *S. Typhimurium* DT104 R-type ACSSuT has emerged as the most common multiresistant *Salmonella* strain in the United States. Vigilant surveillance and further investigations will be necessary to monitor for development of fluoroquinolone resistance and determine modes of transmission of this strain.

Suggested citation:

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